



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/708,330 | 02/24/2004 | Yang-En Wu | ADTP0096USA | 2329 |

27765 7590 09/06/2006

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
P.O. BOX 506
MERRIFIELD, VA 22116

| |
|----------|
| EXAMINER |
|----------|

NGUYEN, THANH NHAN P

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2871

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

3/

| | | | |
|------------------------------|---|------------------------------------|--|
| Office Action Summary | Application No. 10/708,330 | Applicant(s) WU, YANG-EN | |
| | Examiner (Nancy) Thanh-Nhan P. Nguyen | Art Unit 2871 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2006.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-12 and 14-16 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-4, 6-12 and 14-16 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 6-10, 12 & 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodate (US 5,748,266) in view of Admission and Nishida et al (US 6,965,419).

Regarding claim 9, Kodate discloses a liquid crystal display comprising: a lower substrate (12) having a display area and a non-display area on an upper surface thereof, the lower substrate comprising: a plurality of scan lines (24) and a plurality of data lines (26), wherein the data lines are arranged perpendicular to the scan lines to form a pixel matrix in the display area, the pixel matrix comprising a plurality of pixels (10); a plurality of common electrodes (28) for transmitting a common voltage; and a plurality of common electrode pads electrically connected to the common electrodes, the common electrode pads and the common electrodes are positioned at a same plane on the lower substrate; an upper substrate (72) positioned on the lower substrate oppositely, the upper substrate comprising: a plurality of color filters (32), and black matrices (66) disposed between adjacent color filters; a plurality of spacers (78) positioned on the upper substrate for supporting a space between the upper substrate and the lower substrate, and corresponding to one of the common electrode pads of the

lower substrate; and a conductive material layer (30) positioned on the upper substrate covering the spacers, wherein the conductive material layer covering the spacers is connected to each of the common electrode pads corresponding to each of the spacers; and a plurality of liquid crystal molecules (in liquid crystal layer 34) filled in the space between the upper substrate and the lower substrate, [see figs. 6, 8 & 9].

Kodate does not disclose the spacers are photo spacers.

Admission teaches the spacers are photo spacers for the benefit of controlling the dimensions and positions of the spacers and the uniformity of the cell gap accurately to raise the display performance, [par. 0005].

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to Kodate LCD device with photo spacers for controlling the dimensions and positions of the spacers and the uniformity of the cell gap accurately to raise the display performance, as taught by Admission.

Kodate further does not disclose each of the photo spacers in direct contact with edge portion of adjacent color filters and corresponding to one of the black matrices.

Nishida et al teaches forming spacer (9) in direct contact with edge portion of adjacent color filters (6, 7, 8) and corresponding to one of the black matrices (9), [fig. 12a], for the benefit of not having influence on the display region (or avoiding to reduce aperture in the display region), [col. 17, lines 11-14].

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Kodate LCD device with photo spacers in direct contact with edge portion of adjacent color filters and corresponding to one of the

black matrices for not having influence on the display region (or avoiding to reduce aperture in the display region), as taught by Nishida et al.

Regarding claim 10, Kodate discloses the lower substrate (12) further comprises a plurality of TFTs (16) positioned on each intersection of the scan lines and the data lines as switching elements of the pixels, [see figs. 6, 8 & 9].

Regarding claim 12, Kodate discloses a plurality of color filters (32) positioned on the bottom surface of the upper substrate (72), wherein each of the color filters comprises a red color filter, a green color filter, and a blue color filter, [see fig. 8; col. 2, lines 8-12].

Regarding claim 14, Kodate discloses a polarizer (38) positioned on the upper surface of the upper substrate and a polarizer (38) positioned on the bottom surface of the lower substrate, [see fig. 8].

Regarding claim 15, Kodate discloses each of the pixels contains one of the photo spacers, [see fig. 8, and claim 1 rejection about "photo spacers"].

Regarding claim 16, Kodate discloses the conductive material layer (30) is a transparent ITO layer, [see col. 2, lines 1-3].

Claims 1, 2 & 4 are met the discussion regarding claims 9, 10 & 12 rejection above, respectively. Further, even though Kodate lacks disclosure of forming a plurality of scan lines, a plurality of common electrodes, and a plurality of common electrode pads on an upper surface of the lower substrate simultaneously, it was obvious to one ordinary skill in the art to form those elements simultaneously as for the benefit of reducing manufacturing process, and therefore achieving better product yield.

Claims 6-8 are met the discussion regarding claims 14-16 rejection above, respectively.

Claims 3 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kodate in view of Admission and Nishida et al as discussed above and further in view of Kurauchi et al (US 5,917,572).

Regarding claim 11, Kodate does not disclose the lower substrate further comprises an alignment film having a plurality of openings disposed on the common electrodes, and the dimension of each photo spacer plus the dimension of the conductive material layer covering the photo spacer substantially equal to the dimension of each opening so that the alignment film is in contact with the conductive material layer.

Kurauchi et al teaches the lower substrate (11) comprising an alignment film (21) having a plurality of openings disposed on the common electrodes, and the dimension of each spacer (33) plus the dimension of the conductive material layer (34) covering the spacer substantially equal to the dimension of each opening so that the alignment film is in contact with the conductive material layer, [fig. 1], for the benefit of aligning the liquid crystal molecules in the display.

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Kodate LCD device with the lower substrate further comprises an alignment film having a plurality of openings disposed on the common electrodes, and the dimension of each spacer plus the dimension of the conductive material layer covering the spacer substantially equal to the dimension of

each opening so that the alignment film is in contact with the conductive material layer for aligning the liquid crystal molecules in the display, as taught by Kurauchi et al.

Claim 3 is met the discussion regarding claim 11 rejection above.

Response to Arguments

Applicant's arguments with respect to claims 1-4, 6-12 and 14-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to (Nancy) Thanh-Nhan P. Nguyen whose telephone number is 571-272-1673. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

(Nancy) Thanh-Nhan P Nguyen
Examiner
Art Unit 2871



HUYEN NGO
PRIMARY EXAMINER